

## **Accelerator Division EH&S Highlights**

**May 2003**

### **Welding Machine Inspection Contract Update:**

EH&ST3 is coordinating with Procurement on a welding machine inspection contract. S. Prior is the subcontracting officer technical representative (SOTR). Accelerator Division EH&S Department and Physics Division EH&S will pay for the annual welding machine inspections. The contract will be set up under a blanket purchase agreement. Equipment owners may call ARCET directly to arrange inspection. ARCET will submit the invoice to Procurement and inspection costs will be paid out of the respective EH&S budget. Welding equipment owners should be able to arrange for inspections under contract by June 16, 2003. Equipment repairs are not covered under the contract.

### **EES New Liftgate**

- A new liftgate has been installed on the EES Group's white Dodge pickup. Receipt of truck w/ liftgate was on May 29, 2003.
- The liftgate is a dual drive hydraulic system that features several safety devices to include a pressure relief that won't allow the gate to operate if the load is too heavy; and check valves that prevent the gate from falling in the event of a hose failure. There are several other safety features that will be discussed in the training.
- EH&S T3 is developing operator training. Initial classroom and practical training will be given by Ken Boyes, Facilities Management. After this date, training for new operators will be available via the web. The training will be assigned an SAF number and included as required training for all EES Group liftgate operators.

### **Benchtop Grinders**

- Out-of-tolerance guarding for benchtop grinders appears to reoccur with some regularity, most likely due to vibration during tool use.
- Not all the *users* of the grinders are the *owners* of the grinders. Therefore, some users may not be aware of the proper tolerances for the guarding.
- Many users may not realize that an appliance no more intimidating than a toaster, can literally take off the top of your head if not used properly.
- The IS Group, EH&S Department developed poster that contains basic safety information regarding proper PPE to use and how to check the guarding.
- The IS Group has also developed a simple "dumb" or "go, no-go" gauge to be mounted on or near the pedestal or bench grinder. This will make it easier for the user to adjust the tool rest / tongue guard. A tool for making adjustments will also be provided.
- The IS Group is also developing a short training package (Just-In-Time (JIT)) on benchtop grinder safety.

### **EH&S Manual Activity**

- A new Appendix, 6210-T3 Special Storage Battery Use went out for a level 2 review, Carter Ficklen is the author.

## **Accelerator Division EH&S Highlights**

**May 2003**

- Chapter 6152 Storage and Use of Flammable Gases for Experiments at Jefferson Lab, made changes from the author and sent back to the author), next step will be Director's Council package
- Level 2 comments for Chapter 2240 EH&S Committees were compiled and forward to the author. It is now ready for level 3 review.
- Level 3 comments for Chapter 2210 EH&S Responsibilities of Individuals, Chapter 3510 Emergency Management, and Appendix 3510-T9 Emergency Communications were compiled and sent to the author.

### **Lessons Learned: Amputation Injury at CTF**

1. Definitions of sub-system owner/manager need to be clear.
2. Support team supervisors, group engineers, and workers should receive periodic training updates or refreshers by the sub-system owner.
3. Stay-out zones for applicable equipment, such as those with rotating parts, should be pre-determined and marked.
4. It is important to maintain control of the accident scene and to ensure that body parts, associated with an amputation injury, are properly and safely retrieved.

### **PSS Certification Activity**

FEL recertification completed. Note that the next certification date is driven by the requirement for two per calendar year, not the normal 4-8 months. We also completed the PSS certification of the CMTF and VTA. The CMTF operators requested that we reassess the waveguide configuration procedures/logic during the next logic update to see if there is a better way to allow testing in the 1MW area while still having flexibility in the operation of the other RF systems.

All certification schedules are now posted on the SSG web site at:

<http://www.jlab.org/accel/ssg/group/Certification%20Schedule.pdf>

Began working on upgraded PSS display computer for the MCC. The new display should be ready to go in at next extended down, which is currently July 4, 2003.

### **Ergonomic Workstation for Test Lab QA Station**

Ergonomic workstation received for QA station in the Test Lab. The unit is used to support coordinate measuring machine work done in the room. Typical job length is 8 hours. With the small table that was used to hold the computer, a lot of bending and twisting was necessary. The new table can be raised (electrical control) and the new computer monitor is a flat screen unit with an adjustable arm feature. One more modification to the setup is required: the granite table should be raised so that it is above waist height for the operator.

### **Diffusers for Liquid Cryogen Dispensing**

The IH Group received a request for clarification on the use of diffusers with cryogenic liquid dispensing from large to small dewars. Diffusers are needed to prevent splashing, particularly important when filling small dewars (15l and less).

### **International Conference on Accelerator Large Experimental Physics Controls Systems (ICALEPCS)**

## **Accelerator Division EH&S Highlights**

### **May 2003**

Kelly Mahoney was invited to give the anchor talk for the safety and reliability session at the 2003 ICALEPCS conference. The conference will be held in October 2003 in S. Korea.

### **New Beam Position Monitor Development**

Radcon group staff (Dan & Pavel) are developing a new beam position monitor (BPM). The new BPM will be tested using hot N<sub>2</sub> gas to measure outputs while applying heat on specific locations. If this goes well, next step will be to test with the beam.

### **ODH Alarm Response**

During the MCC/Cryo response to a small cryogen valve leak, discrepancies were noted between the MCC operators ODH alarm response procedures, the EH&S Manual Chapter 6500, and the Cryogenics (Cryo) Group's procedures for verifying and investigating an ODH problem. The issues centered on the appropriate ODH classification for ODH investigation, the interface between the Crew Chief and the Cryo Coordinator, and the appropriate personal protective equipment required during ODH alarm investigations for operators and Cryo staff. An initial coordination meeting was held with the Operations, Cryo, and EH&S Department staff. Follow-on meetings to resolve the procedural gaps are planned in June 2003.

### **EPCRA Inventory Approaching Process Safety Standard Limit**

The IH Group assisted EH&S Reporting with the EPCRA inventory. Liquid bromine was added to the inventory list. It is used in the cooling towers on site. The onsite inventory is approaching the Process Safety Standard limit. Facilities Management maintains 1300 lbs of liquid bromine onsite. The OSHA process safety standard limit is 1500 lbs onsite. Inventory management steps are being taken to ensure the lab does not cross the inventory threshold.

### **Lighting Survey in Test Lab Machine Shop**

Lighting survey was conducted for the Test Lab Machine Shop, after Facilities Management upgraded the lighting in that work area. Much improved, but the need for individual task lights at each station still exists.

### **Effluent Pipe Leak in Test Lab Basement**

There was an effluent pipe leak in Test Lab basement. This pipe transfers treated acid rinsewater to HRSD. Facilities Management repaired the pipe.

### **Radiation Worker Training**

JRRP met to discuss, among other things, training policy and protocols for Radiation Worker Training. The likely outcome is that the current self study brochure will be brought up to date and offered as valid initial training with the CBT and classroom training.

## **Accelerator Division EH&S Highlights**

**May 2003**

### **Dosimetry**

The Radcon Group Leader submitted a request to change JLab's DOELAP beta category from "special" to "general" to take advantage of expanded testing by our new vendor and to keep our accreditation as broad as possible. Keith Welch is also exploring a different (non-TLD based) technology for reliable high range dosimetry to provide support for equipment damage studies. We will be obtaining radio-chromic dosimetry system components for testing sometime next month.

### **EH&S Training Space**

We combined the computer testing space in the Safety Lab Trailer with the Radcon training room in Trailer 52C. This will allow classroom training to start quickly in the RadCon Training Trailer. The former training room in Trailer 35 has been converted to an industrial hygiene laboratory.

### **Hall Dome Fence Modifications**

Hall dome fence modifications work was initiated this month. The plan is to build a new fence with old fence in place, then pull down old fence after the new configuration is secure. We will use alarming Electronic Dosimeters for part of the job where workers are above the "plateau line". We're also putting up flexiposts around dump buildings for boundaries.

### **EH&S Tracking System**

Meetings were held throughout the month to evaluate sitewide EH&S reporting requirements and the feasibility of expanding the Accelerator Division's tracking system to a sitewide system supported by the MIS group. The assessment was still in progress at month's end.

An upgrade to the EH&S Tracking System, Version 2, is nearing completion. We are also coordinating with the SRF Institute to reorganize the index of EH&S Department documentation which will make document retrieval easier.

Tracking EH&S Manual chapter updates is a new feature in the tracking system. The records temporarily reside under the "Assessments" section of the database until we complete development of a separate section for the EH&S Manual within the tracking system.

## **Administration Division Notes for EH&S Committee**

*For meeting of 6/13/2003*

### **Facilities Management**

#### ***Projects with EH&S Implications***

Central Chiller Utility (Energy project) – Installation of the underground piping is in full swing, necessitating cordoning off areas with access only for those involved with the construction project. Also, the depth of some trenches is greater than originally anticipated by the subcontractor, and this has dictated a revision to the firm's original safety plan and activity hazard analysis – specifically measures to prevent side wall collapse.

This project has afforded an opportunity for Facilities Management to wring out new specifications for buried utility location and "tagging" new underground systems to aid in their future location. Best Practices in this field have matured significantly in the last few years – due in part to a major 1999 study and report sponsored by the U.S. Dept. of Transportation entitled, "Common Ground." It redefined industry best practices, and it was used to make some refinements in the JLab Guide Specification used by Facilities Management.

#### ***Golf Cars***

Facilities Management is in the process of equipping all golf cars on site with flag masts and rear-view mirrors. Some cars already have one or both features, but all need them – the flags to make the cars more conspicuous among other vehicles as they drive through parking lots, and the mirrors for all of the obvious reasons.

### **EH&S Training**

#### ***AED Refresher Training***

Because of some recent changes to Virginia rules on automatic external defibrillators (AEDs) and Dr. Chandler's recommendations, the EH&S Training Subcommittee agreed that JLab should cease the mandatory 6-month AED refresher retraining and utilize the following approach:

- CPR/AED training will continue to be recommended for all interested employees every two years. "How to use an AED," and "How to do CPR" posters will be provided to be placed adjacent to all AED's.
- Any employee who wants optional AED retraining more often than every two years should contact Medical Services. We will happily provide retraining to anyone who requests it. Daily service indicator checks by a responsible person in the work area (e.g. crew chief) and monthly complete checks of the equipment by Medical Services will continue without change.

### ***Safety Warden Session***

There is a session of SAF901, Safety Warden Training scheduled for June 18<sup>th</sup> & 19<sup>th</sup>. There is space for an additional participant or two. Contact J. Kelly if interested.

### **Emergency Management**

- A tabletop exercise involving the Director's Command Staff is in the planning phase. Preliminary target dates are in the second or third week of July.
- Preparations are underway for the EM Peer Review that will be conducted August 6th and 7th. The Emergency Manager (JKelly) is contacting prospective JLab presenters who are involved with key aspects of our overall EM program.

### **Miscellaneous**

#### ***EH&S Assistant***

James (Jimmy) Shaffer began work the week of 6/9, filling the position formerly held by Melissa Mills. He will be making the rounds to introduce himself and to pick up a number of threads involving emergency management and ARC EH&S.

#### ***Stockroom***

The JLab Stockroom is now a unit of Procurement, managed by Danny Lloyd. I will be adding it to my inspection schedule, and Barbara Prisco will continue as the area safety warden.

#### ***Affirmative Procurement***

Procurement has offered to provide a metric to be used on the ISM poster: a chart/graph for key "Green" products that will help identify those items that need additional emphasis. DOE has mandated that by FY '05 all labs reach a 100% utilization of recycled content and remanufactured products that have been identified by EPA.

Data for FY 2002 is about the same as the prior year; over \$200K in purchases with an overall compliance of 87% for JLab.

General information about JLab's Affirmative Procurement ("Green") actions is found at: [http://www.jlab.org/div\\_dept/admin/business/green/overview.html](http://www.jlab.org/div_dept/admin/business/green/overview.html)

Green newsletter link:

<http://www.jlab.org/intralab/earthwise/newsletter/summer02.pdf>



---

## EH&S Reporting Activities for May 2003

- As of May 31<sup>st</sup>, Jefferson Lab had achieved **15** consecutive days without a lost-time injury. The Lab record is **455** consecutive days without a lost-time injury. There were two recordable injuries in May. Both injuries were Accelerator Div. staff - one was an eye injury resulting in 13 restricted days, and the other was a severe Cryogenic Test Facility finger injury resulting in the loss of several finger tips.
  
- Occurrence Reporting
  - The Final Report of an April 29<sup>th</sup> Test Lab event was prepared for management review. The Test Lab event involved qualified subcontractor personnel using the overhead crane without observing the crane hook. This resulted in some electrical conduit damage.
  - EH&S Reporting reviewed a number of final draft documents from the upcoming DOE occurrence reporting (ORPS) re-engineering initiative. The new ORPS is to become effective July 1, 2003. The current three ORPS reporting levels will be replaced by six reporting levels. Event causal analysis will still be required for five of the six reporting levels. Training on the new ORPS is planned for June 10<sup>th</sup> by videoconferencing of a one-day DOE Headquarters training class. A number of large DOE laboratories and facilities have estimated that their ORPS reporting will decrease 25-40% due to nuclear quality assurance considerations. This new guidance should have only a moderate overall Jefferson Lab ORPS reporting impact.
  
- DOE Reviews
  - During May, ORO staff completed a "For Cause Review of Contractor Electrical Safety" following several recent electrical safety incidents at the Oak Ridge reservation. The review covered twelve 2002 ORO electrical incidents. Jefferson Lab had experienced three of the twelve incidents (the January 2002 severed buried electrical line, the February 2002 FEL electrical shock, and the October 2002 Vertical Test Area "near miss") that were covered in the ORO review. The ORO review of the Jefferson Lab incidents was conducted by a combination of information requests and conference calls. ORO generated a final report in May and the Lab response was coordinated by the Director, Office of Assessment.
  - EH&S Reporting coordinated the Lab response to a special DOE Headquarters request for future Lab radioactive waste generation projections. The assistance of Keith Welch with this response is appreciated.

- The EH&S Reporting Manager, in his role as Director's Office EH&S Officer, reviewed Science Education Office EH&S orientation materials. Personnel participating in summer educational programs receive EH&S orientations using these materials.
- The registration for a new Virginia Department of Environmental Quality general permit to address storm water discharges was submitted. EH&S Reporting is working with Facilities Management to identify Lab requirements that will become effective when the permit is issued.
- EJ&S Reporting provided final editing of a draft technical appendix on special storage battery use for EH&S Manual Chapter 6210, *General Electrical Safety*. This document will allow closure of an open Work Smart Standards hazard issue.
- RadCon has successfully got the activation level in the two high power beam dump cooling systems below 0.1 Ci/ $\mu$ Ci/ml, a noteworthy accomplishment.
- **Work Smart Standards (WSS) Set**
  - Proposed 2002 changes to the WSS Set, including narrowing the electrical safety hazard issues down to two, are working their way through the change process.
  - EH&S Reporting is working with the Policy and Manuals Group to ensure new or modified hazards or standards become addressed appropriately in the EH&S Manual.
- **National Environmental Policy Act (NEPA)**
  - CEBAF and FEL Upgrade Environmental Assessment (EA)
    - Proposed Action/Project Information Checklists are being prepared. The CHL expansion and the FEL draft checklists are near completion.
    - The 16 GeV and Hall D checklists have been started.
  - EH&S Reporting is working with other laboratory staff to address other NEPA items, including actions related to the new CEBAF Center addition construction project.



**Physics Division  
EH&S Activities  
May 2003**

**For the month** – The Hall A Group continued experiment E97-110: The GDH Sum Rule, the Spin Structure of  $^3\text{He}$  and the Neutron using Nearly Real Photons, which was followed by a hall opening for maintenance and repair of experimental apparatus.

The Hall B Group continued experiment e1.

The Hall C Group continued with experiment E01-002 an update to E97-101: Baryon Resonance Electro-production at High Momentum Transfer.

The EH&S Group priority was oversight and assistance to staff and user community.

**Experimental Readiness and Work Control Documents**

Reference Jefferson Lab EH&S Manual Chapter 3120 – Experimental Review, and Chapter 3320 - Temporary Work Permits

Readiness reviews are required by Jefferson Lab management for all major installation experiments. The purpose of these reviews is to assure that the experiment will have a high probability of being scientifically successful and operating in an efficient and safe manner.

A second readiness review of the High Resolution Hypernuclear Spectroscopy (HKS)

Experiment E01-011 was conducted on May 13. The review committee from Jefferson Lab: Roger Carlini (Chair), Hari Areti (Beam Line), Butch Dillion-Townes (Mechanical), Howard Fenker (Detectors), Bert Manzlak (EH&S), and from Old Dominion University, Paul Ulmer (Commissioning), and Gregg Franklin (Experimental Technique) from Carnegie Mellon University, found no major Issues or Concerns and it appears the experiment is on track for a possible installation as early as the spring 2004.

There was no new Operational Safety Procedure, Temporary Operational Safety Procedure, Standard Operational Procedure, or Experiment Readiness Certificate given approval.

**Inspections**

Reference Jefferson Lab EH&S Manual Chapter 5100 - Internal Inspections

Four formal inspections identified ten new recordable action items, four remain open. The area safety warden, Brian Kross, assisted division EH&S staff on inspections of the division spaces in the Experimental Equipment Laboratory, Bldg.90 and the Applied Research Center, Bldg. 001.

**Hurricane Season**

Reference Jefferson Lab EH&S Manual Chapter 3510 T4 - Severe Weather Procedures

For Atlantic Hurricane Season 2003, the Hall C work coordinator / area safety warden, Walter Kellner, will serve as the division hurricane coordinator for the experimental hall areas.